CONTENTS OF VOLUME 13

Number 1

i Editorial Announcement

W. B. Mann — 1 Guidelines to authors submitting papers to the *International Journal of Radiation Applications and Instrumentation*

Robert Paul, Dirk Roeda, Risto Johansson, Aapo Ahonen, Merja Haaparanta, Olof Solin and **Hannu Sipilä** — 7 Scintigraphy with [^{18}F]2-fluoro-2-deoxy-D-glucose of cancer patients

Makoto Gomibuchi, Romaine E. Saxton, Ralph R. Lake, Mitsuo Katano and **Reiko F. Irie** — 13 Radioimmunodetection of human melanoma tumor xenografts with human monoclonal antibodies

Atsushi Ando and **Itsuko Ando** — 21 Distribution of ^{95}Zr and ^{181}Hf in tumor-bearing animals and mechanism for accumulation in tumor and liver

W. A. Volkert, B. Edwards, J. Simon, D. A. Wilson, E. H. McKenzie, P. Oberle and **R. A. Holmes** — 31 *In vivo* skeletal localization properties of ^{99m}Tc complexes of large phosphonate ligands

Rashid A. Fawwaz, Soji Oluwole, Suresh Srivastava, Chihiro Iga, Theodore Wang, Joel M. Rosen, Mark A. Hardy and **Philip O. Alderson** — 39 The biodistribution of radiolabeled antilymphocyte monoclonal antibody in the rat

C. P. Herbst, A. van Aswegen, P. H. T. Kleynhans, A. C. Otto, M. G. Lötter and **P. C. Minnaar** — 43 Radionuclide determination of absolute LV volumes: interstudy, interobserver and intraobserver variances

T. C. Pinkerton, K. T. Cheng, S. M. Shaw and **G. M. Wilson** — 49 Influence of complex charge and size on the uptake of ^{99m}Tc–diphosphonates in osteogenic tissue

John C. Gridley, Edward H. Allen and **Badaruddin Shaikh** — 57 Reducing the effect of chemiluminescence on the efficiency of extracting ^{14}C-neomycin from fortified kidney tissue as measured by a liquid scintillation system

Jacobus D. M. Herscheid, Gertrudis H. J. N. Knops, Saskia Boele and **Arend Hoekstra** — 63 On the mechanism of gallium accumulation in tumours. Isolation of N-hydroxypeptides

Technical Notes

O. P. D. Noronha and **A. B. Sewatkar** — 67 Comparison of three RE agents—^{99m}Tc-phytate, ^{99m}Tc-sulfur colloid and ^{99m}Tc-Sb_2S_3 colloid in the rodent species

Mridula Misra and **Some Nath Banerjee** — 75 Preparation and biodistribution of ^{99m}Tc chelate of strophanthidin—a cardiac aglycone

Letter to the Editors

Kenji Hashimoto, Osamu Inoue, Kazutoshi Suzuki, Toshiro Yamasaki and **Masaharu Kojima** — 79 Deuterium isotope effect of [$^{11}C_1$]N,N-dimethylphenethylamine-α,α-d_2; reduction in metabolic trapping rate in brain

Number 2

Second International ACOMEN Conference on Radiopharmaceuticals

Jean-Olivier Peyrin and **André Wagner** — v Preface

Yves Cohen — 81 The concept of radiopharmaceuticals: a general report

M. Bourdoiseau — 83 Iodine radiochemistry and radiopharmaceutical product labeling

Marcel Guillaume and **Claude Brihaye** — 89 Generators for short-lived gamma and positron emitting radionuclides: current status and prospects

Dominique Comar and **Christian Crouzel** — 101 Biomedical cyclotrons for radioisotope production

Gerhard Stöcklin — 109 Molecules labeled with positron emitting halogens

Christian Crouzel and **Dominique Comar** — 119 Carbon-11, nitrogen-13 and oxygen-15-labelled molecules

André Syrota — 127 *In vivo* study of receptors for neuromediators with PET

W. C. Eckelman — 135 Receptors labeled with gamma-emitting radiotracers

Fabienne Therain, Jacques Gros and **Gérald Picaper** — 141 Labeling of estrogen receptors in breast cancer

Mathew L. Thakur — 147 A look at radiolabeled blood cells

Y. Najean — 159 The choice of tracers for platelet kinetic and scintigraphic studies

Pierre J. Bernard, Maurice Bazan and **Catherine de Laforte** — 165 Labeled platelets in the detection of the thrombotic process

J. Martin-Comin — 173 Kidney graft rejection studies with labeled platelets and lymphocytes

Jean Y. Herry, Annick Moisan, Joseph Le Cloirec, Jean F. Bretagne, Pierre Darnault, Jean L. Cardin and **Antoine Martin** — 183 Indium 111 autologous granulocytes in the diagnosis of abscess and in the assessment of inflammatory bowel disease

J. C. Saccavini, J. Bohy and **J. Bruneau** — 191 Radiolabeling of monoclonal antibodies

Samuel E. Halpern — 195 The advantages and limits of indium-111 labeling of antibodies. Experimental studies and clinical applications

Jean-François Chatal — 203 The advantages and limits of immunoscintigraphy in the diagnosis of tumoral recurrences

Steven M. Larson, Jorge A. Carrasquillo, James C. Reynolds, Ingegerd Hellstrom, Karl-Eric Hellstrom, James C. Mulshine and **Louis E. Mattis** — 207 Therapeutic applications of radiolabelled antibodies: current situation and prospects

A. Verain — 215 The French procedure for granting new drug approval for radiopharmaceuticals

Y. Jean-Baptiste — 221 Quality control of radiopharmaceuticals: the manufacturer's point of view

Ch. A. Bizollon and **G. Galy** — 223 Quality control of radioactive products in the hospital

Franck Coustou — 227 The liability of the radiopharmacist and the nuclear physician in the use of radiopharmaceuticals

Number 3

Peter Eberstadt, Ofelia González and **M. Victoria Guasti Fernández** — 231 Biological half-time of tritiated water: comparison of hyperthyroid and hypothyroid patients

Clifford R. Jack Jr, Mrinal K. Dewanjee, Manuel L. Brown, Glenn Forbes and **Sushital Chowdhury** — 235 Radiolabeled polyvinyl alcohol particles: a potential agent to monitor embolization procedures

M. Rezvani and **J. W. Hopewell** — 245 The validity of different methods of analysis of ^{133}Xe washout curves for the determination of lung function

Louie J. Gati, Leonard I. Wiebe, John W. Tse, Connie J. Turner and **Antoine A. Noujaim** — 253 Comparative studies of radiocitrates in oncological models—1. ^{99m}Tc citrate and ^{67}Ga citrate uptake by EMT-6 tumors in mice

Leonard I. Wiebe and **Edward E. Knaus** 257 Drug-induced perturbations in the *in vivo* distribution of oncological radiotracers—I. 5-Fluoro-6-^{3}H-2′-deoxyuridine influenced by nitrobenzylthioinosine 5′-phosphate (NBMPR-P)

S. B. Chaplin, P. A. Oberle, E. H. McKenzie, T. J. Hoffman, W. A. Volkert, R. A. Holmes, L. R. Canning, R. D. Pickett, D. P. Nowotnik and **R. D. Neirinckx** 261 Regional cerebral uptake and retention of ^{99m}Tc-tetramethyl– and pentamethyl–propyleneamine oxime chelates

M. R. Zalutsky, M. A. Noska and **P. W. Gallagher** 269 Properties of multilamellar liposomes containing $^{99m}TcO_4^-$: effect of distearoylphosphatidylcholine to sphingomyelin ratio

R. K. Jeevanram, D. H. Shah, S. M. Sharma and **R. D. Ganatra** 277 Influence of initial large dose on subsequent uptake of therapeutic radioiodine in thyroid cancer patients

Joanna S. Fowler, Carroll D. Arnett, Alfred P. Wolf, Chyng-Yann Shiue, Robert R. MacGregor, Christer Halldin, Bengt Långström and **Henry N. Wagner Jr** 281 A direct comparison of the brain uptake and plasma clearance of *N*-[^{11}C]methylspiroperidol and [^{18}F]*N*-methylspiroperidol in baboon using PET

Éva C. Orbán and **Z. Pál** 285 The preparation and properties of a highly specific antiserum elicited with 3-dehydrocholylglycine 3-succinyl–bovine serum albumin conjugate

F. C. Hunt, D. J. Maddalena, J. G. Wilson and **G. J. Bautovich** 289 Phenolic aminocarboxylate chelates of ^{99m}Tc as hepatobiliary agents

Julie Campbell, Johan C. Bellen, Richmond J. Baker and **Ashley B. McLaren** 295 A comparison of radiolabelled agents for thrombus imaging using a rabbit model

Letter to the Editors
Gerald A. Russ and **Michele A. Campione** 301 Assessment of labeled 5-fluorouracils for nuclear scintigraphy

Announcement i

New Patents iii

Number 4

RADIOLABELED MONOCLONAL ANTIBODIES

Chemical, Diagnostic and Therapeutic Investigations

Suresh C. Srivastava and **Leonard F. Mausner** V Preface

Sally J. DeNardo, Jo-Sen B. Peng, Gerald L. DeNardo, Stanley L. Mills and **Alan L. Epstein** 303 Immunochemical aspects of monoclonal antibodies important for radiopharmaceutical development

Claude F. Meares 311 Chelating agents for the binding of metal ions to antibodies

Walter Wolf and **Jashovam Shani** 319 Criteria for the selection of the most desirable radionuclide for radiolabeling monoclonal antibodies

Fyllis L. Otsuka, Julian B. Fleischman and **Michael J. Welch** 325 Comparative studies using ^{125}I- and ^{111}In-labeled monoclonal antibodies

W. C. Eckelman and **C. H. Paik** 335 Comparison of ^{99m}Tc and ^{111}In labeling of conjugated antibodies

A. Najafi, H. D. Fawcett and **N. Hutchison** 345 Comparison of two methods of labeling proteins with ^{111}In

Vernon L. Alvarez, Mei-Li Wen, Chyi Lee, A. Dwight Lopes, John D. Rodwell and **Thomas J. McKearn** 347 Site-specifically modified ^{111}In labelled antibodies give low liver backgrounds and improved radioimmunoscintigraphy

D. J. Hnatowich 353 Label stability in serum of four radionuclides on DTPA-coupled antibodies—an evaluation

Chang H. Paik, William C. Eckelman and Richard C. Reba	359	Transchelation of ^{99m}Tc from low affinity sites to high affinity sites of antibody
William C. Cole, Sally J. DeNardo, Claude F. Meares, Michael J. McCall, Gerald L. DeNardo, Alan L. Epstein, Harold A. O'Brien and Min K. Moi	363	Serum stability of ^{67}Cu chelates: comparison with ^{111}In and ^{57}Co
Feng-Ming Chen and David E. Troutner	369	A bifunctional ligand for Pd(II)
D. J. Hnatowich	373	High performance liquid chromatography in studies of radiolabeled antibodies
J. Shani, W. Wolf, W. Chanachai, S. Mohd, R. H. Reisfeld and L. E. Walker	379	Labeling and comparative biodistribution of the monoclonal antibody KS1/4 in nude mice bearing human lung adenocarcinoma
D. A. Goodwin, C. F. Meares, G. F. David, M. McTigue, M. J. McCall, J. M. Frincke, M. R. Stone, R. M. Bartholomew and J. P. Leung	383	Monoclonal antibodies as reversible equilibrium carriers of radiopharmaceuticals
Steven M. Larson	393	A tentative biological model for the localization of radiolabeled antibody in tumor: the importance of immunoreactivity
Dorothee Herlyn, John Powe, Dieter L. Munz, Abass Alavi, Meenhard Herlyn, George E. Meinken, Suresh C. Srivastava and Hilary Koprowski	401	Radioimmunodetection of human tumor xenografts by monoclonal antibody $F(ab')_2$ fragments
Michael D. Ezekowitz, Barry S. Coller and Suresh C. Srivastava	407	Potential application of labeled antibodies for thrombus detection
M. K. Dewanjee, S. K. Singh, P. H. Wooley, S. T. Mackey, E. Solis and M. P. Kaye	413	Identification of new collagen formation with ^{125}I-labeled antibody in bovine pericardial tissue valves implanted in calves
G. Paganelli, P. Riva, G. Moscatelli, A. Stacchiotti, M. Agostini, G. Landi, V. Tison, P. Pancea and A. G. Siccardi	423	Improved immunoscintigraphy by subcutaneous injection of ^{99m}Tc or ^{111}In labelled $F(ab')_2$ fragments of an anti-melanoma monoclonal antibody
R. A. Fawwaz, T. S. T. Wang, S. C. Srivastava and M. A. Hardy	429	The use of radionuclides for tumor therapy
M. J. Myers, A. A. Epenetos and G. Hooker	437	Practical assessment of radiation doses using labelled antibodies for therapy
Syed M. Quadri and Barry W. Wessels	447	Radiolabeled biomolecules with ^{186}Re: potential for radioimmunotherapy
L. C. Washburn, T. T. Hwa Sun, J. E. Crook, B. L. Byrd, J. E. Carlton, Y.-W. Hung and Z. S. Steplewski	453	^{90}Y-labeled monoclonal antibodies for cancer therapy
Raj Kishore, Janet F. Eary, Kenneth A. Krohn, Wil B. Nelp, Thomas W. Menard, Paul L. Beaumier, Karl Erik Hellström and Ingegerd Hellström	457	Autoradiolysis of iodinated monoclonal antibody preparations
Richard P. Spencer	461	Applied principles of radiopharmaceutical use in therapy
Edward Deutsch, Karen Libson, Jean-Luc Vanderheyden, Alan R. Ketring and Harry R. Maxon	465	The chemistry of rhenium and technetium as related to the use of isotopes of these elements in therapeutic and diagnostic nuclear medicine
W. F. Goeckeler, D. E. Troutner, W. A. Volkert, B. Edwards, J. Simon and D. Wilson	479	^{153}Sm radiotherapeutic bone agents
R. H. Seevers, R. C. Mease, A. M. Friedman and E. R. Desombre	483	The synthesis of non-steroidal estrogen receptor binding compounds labeled with ^{80m}Br

Number 5

T. R. Sykes, T. J. Ruth and **M. J. Adam**	497	Synthesis and murine tissue uptake of sodium [^{18}F]fluoroacetate
T. R. Sykes, A. A. Noujaim, L. G. Stephens-Newsham, P. K. Ng, B. C. Lentle and **A. R. Turner**	501	Effect of *cis*-platinum on the protein binding and pharmacokinetics of ^{67}Ga-citrate
M. C. Ward, K. R. Roberts, J. W. Babich, M. A. Bukhari, G. Coghlan, J. H. Westwood, V. R. McCready and **R. J. Ott**	505	An antibody–desferrioxamine conjugate labelled with ^{67}Ga
A. van Aswegen, A. J. van Wyk, J. P. Roodt, M. G. Lötter, A. C. Otto and **P. C. Minnaar**	509	Radionuclide cholescintigraphic imaging: an evaluation of several ^{99m}Tc labelled hepatobiliary radiopharmaceuticals
A. Seidel, M. Wiener, E. Krüger, R. Wirth and **H. Haffner**	515	Studies on the lysosomal binding of ^{141}Ce, ^{239}Np, ^{239}Pu and ^{241}Am in rat and Syrian hamster liver using carrier-free electrophoresis
Alan B. Packard, Gail M. O'Brien and **S. Treves**	519	The development of an ^{191}Os → ^{191m}Ir generator using an osmium chelate parent complex—I. Trans-dioxobismalonatoosmate(VI)
Michael J. Welch, Dae Yoon Chi, Carla J. Mathias, Michael R. Kilbourn, James W. Brodack and **John A. Katzenellenbogen**	523	Biodistribution of N-alkyl and N-fluoroalkyl derivatives of spiroperidol; radiopharmaceuticals for PET studies of dopamine receptors
Richmond J. Baker, Johan C. Bellen, Daniel Fornasiero and **Stan Penglis**	527	The preparation of ^{99m}Tc–tertiarybutylisonitrile (^{99m}Tc–TBI) by a method suitable for routine clinical use
Charlotte A. Otto, Phillip S. Sherman, Susan J. Fisher, Valeri L. Valoppi, John C. Marshall, Ricardo V. Lloyd, W. Leslie Rogers and **Donald M. Wieland**	533	Pituitary localization of ^{3}H-spiroperidol by an uptake/storage mechanism?
Charlotte A. Otto, John C. Marshall, Ricardo V. Lloyd, Phillip S. Sherman, Susan J. Fisher, Valeri L. Valoppi, W. Leslie Rogers and **Donald M. Wieland**	539	Use of DES-treated rats as an animal model for assessment of pituitary adenoma imaging agents
T. Jyotsna, M. R. A. Pillai, Jyoti H. Gupte and **R. S. Mani**	549	Mild radioiodination of insulin with dichloramine-T
H. Kizuka and **R. N. Hanson**	551	Synthesis and biodistribution of ^{125}I labeled bivalent analogs of practolol as potential myocardial imaging agents
C. Cornelisse, J. Van der Sluys Veer, J. J. M. Binsma and **C. J. A. Van den Hamer**	557	Investigation of the zinc status of surgical patients—II. Influence of vascular reconstruction of the zinc status
Bernadette Hughes, Steven R. Bergmann, Peter B. Corr and **Burton E. Sobel**	565	External detection of β-adrenoreceptors with ^{125}I-hydroxybenzylpindolol in isolated perfused hearts
Toru Sasaki and **Shuji Kojima**	573	^{67}Ga binding to sulfated proteoglycan in normal and CCl_4-damaged liver
Else-Maj Suolinna, Merja Haaparanta, Robert Paul, Pirkko Härkönen, Olof Solin and **Hannu Sipilä**	577	Metabolism of 2-[^{18}F]fluoro-2-deoxyglucose in tumor-bearing rats: chromatographic and enzymatic studies
Technical Note		
T. C. Richardson	583	Astatine (^{211}At) as a therapeutic radionuclide. The plasma:blood cell distribution *in vitro*
Letter to the Editors		
Richard P. Spencer, Larry A. Spitznagle, Mozafareddin K. Karimeddini and **Fazle Hosain**	585	Breast milk content of ^{131}I in a hypothyroid patient
Announcements	587	
New Patents	i	

Number 6

T. R. Sykes, A. A. Noujaim, L. G. Stephens-Newsham, B. C. Lentle and A. R. Turner — 589 Immediate and delayed effects of *cis*-platinum treatment on the short term biodistribution of ^{67}Ga-citrate in mice

T. R. Sykes, A. A. Noujaim, L. G. Stephens-Newsham, B. C. Lentle, A. R. Turner, P. K. Ng and H. R. Hooper — 593 Effect of *cis*-platinum treatment on ^{67}Ga-citrate localization and elimination in rabbits

Frank P. Castronovo Jr, Kenneth A. McKusick and H. William Strauss — 599 The 4 h/24 h ^{99m}Tc–MDP whole body retention: a new index of bone pathology

Takeo Hosotani, Akira Yokoyama, Yasushi Arano, Kazuko Horiuchi, Hideo Saji and Kanji Torizuka — 603 Design of bifunctional radiopharmaceutical for the development of ^{99m}Tc complexes for myocardial imaging agents

A. Ibañez Zurriaga, R. Garcia Domenech, A. Farga Marti and J. Galvez Alvarez — 611 ^{99m}Tc–tetracycline radiopharmaceutical: physical chemistry study related to the preparation and reaction products and thermodynamic stability

Nagichettiar Satyamurthy, Gerald T. Bida, Jorge R. Barrio, Andre Luxen, John C. Mazziotta, Sung-Cheng Huang and Michael E. Phelps — 617 No-carrier-added 3-(2′-[^{18}F]fluoroethyl)spiperone, a new dopamine receptor-binding tracer for positron emission tomography

Milo M. Webber, Ramesh Verma and Bieshia Chang — 625 Tumor uptake of 5-fluorouracil, Methotrexate and Adriamycin vs gallium

Mark G. Kris, Samuel D. J. Yeh, Richard J. Gralla and Charles W. Young — 629 Simultaneous estimation of liquid and solid gastric emptying using radiolabelled egg and water in supine normal subjects

S. Tzila Zwas and Yochanan Ramon — 633 Indirect cervical lymphoscintigraphy in healthy subjects via submucosal cheek injections

Technical Notes

David K. Lavallee and Rashid Fawwaz — 639 The synthesis and characterization of ^{111}In hematoporphyrin derivative

Stephen M. Karesh, Gary L. Dillehay and Robert E. Henkin — 642 Tin level requirements for multiple gated studies in humans: a new perspective

647 Abstracts of the NATO Advanced Study Institute. Radiolabeled Monoclonal Antibodies for Imaging and Therapy: Potential, Problems, and Prospects